CLAIMS:

1. A process for evaluating deterministic behavior of a packet switching network including subscriber stations connected to each other through at least one switch, the behavior defined as deterministic if any packet sent on the network from a source subscriber station reaches the destination subscriber station(s) within a duration that is limited in time, the process comprising:

determining for each output port from each switch on the network if the following relation is satisfied:

$$\sum_{\substack{i \text{ number of virtual links} \\ \text{passing through the buffer}}} \left[1 + \text{int}\left(\frac{(Jitter\ \ In)_i + \max Latency}{BAGi}\right)\right] * (max\ frame\ duration) \leq latency$$

in which:

the max latency value is a maximum residence time in an output buffer of a switch, this value may be different for each switch in the network,

BAGi is a minimum time between two consecutive frames belonging to a virtual link i, before they are transmitted,

(Jitter In)i is Jitter associated with a virtual link i that represents a time interval between a theoretical instant at which a frame is transmitted, and its effective transmission that may be before or after the theoretical instant, and

(max frame duration) i is a duration of a longest frame on the virtual link i.

2. A process according to claim 1, in which the virtual links are added one by one, and the determining is performed after each addition of a virtual link.

3. A process according to claim 1, wherein the packet switching network is located on an aircraft.

4. A process according to claim 3, wherein the packet switching network includes a first switch connected to a first graphic screen and a second graphic screen.

5. A process according to claim 4, wherein the packet switching network includes a second switch connected to a flight parameters generator and an aircraft maintenance computer.

6. A process according to claim 5, wherein the first graphic screen displays flight parameters and the second graphic screen displays flight and maintenance parameters.

7. A system for evaluating deterministic behavior of a packet switching network including subscriber stations connected to each other through at least one switch, the behavior defined as deterministic if any packet sent on the network from a source subscriber station reaches the destination subscriber station(s) within a duration that is limited in time, the system comprising:

a control to determine for each output port from each switch on the network if the following relation is satisfied:

$$\sum_{\substack{i \text{ number of virtual links} \\ \text{passing through the buffer}}} \left[1 + \text{int}\left(\frac{(Jitter\ \ In)_i + \max Latency}{BAGi}\right)\right] * (max\ frame\ duration) \leq latency$$

in which:

the max latency value is a maximum residence time in an output buffer of a switch, this value may be different for each switch in the network,

BAGi is a minimum time between two consecutive frames belonging to a virtual link i, before they are transmitted,

(Jitter In)i is Jitter associated with a virtual link i that represents a time interval between a theoretical instant at which a frame is transmitted, and its effective transmission that may be before or after the theoretical instant, and

(max frame duration) i is a duration of a longest frame on the virtual link i.

8. A system according to claim 7, in which the virtual links are added one by one, and the determining is performed after each addition of a virtual link.

9. A system according to claim 7, wherein the packet switching network is located on an aircraft.

10. A system according to claim 9, wherein the packet switching network includes a first switch connected to a first graphic screen and a second graphic screen.

11. A system according to claim 10, wherein the packet switching network includes a second switch connected to a flight parameters generator and an aircraft maintenance computer.

12. A system according to claim 11, wherein the first graphic screen displays flight parameters and the second graphic screen displays flight and maintenance parameters.